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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,584	07/31/2001	Jin-Shan Wang	S2817HEC	1795

7590

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

LD

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/918,584		WANG ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Callie E. Shosho		1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 10-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 10-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Applicants' response filed 2/22/05 overcomes the 35 USC 112, 1<sup>st</sup> paragraph rejection of record.

However, in light of the response, the following new grounds of rejection are set forth below and the finality of the previous office action has been withdrawn. Thus, the present action is non-final.

**Claim Objections**

2. Claims 11-13 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 11, which depends on claim 1, recites that the hyperbranched polymer having a dye chromophore and a hydrophilic group incorporated into the polymer base chain is prepared by polymerization of monomer of the formula  $M^1-R^7-M_m^2$  wherein  $R^7$  is a linear or branched alkyl, carbonyl, or aromatic moiety containing a dye chromophore while claim 1 requires water-soluble hyperbranched polymer having a dye chromophore and a hydrophilic group incorporated into the polymer base chain. Thus, claim 11 fails to further limit the scope of the claim on which it depends given that while claim 1 is limited to water-soluble polymers possessing hydrophilic group incorporated into the polymer base chain, the hyperbranched polymer of claim 11 encompasses hyperbranched polymeric dye that are not water-soluble and do not contain

hydrophilic group incorporated into the polymer base chain, i.e. when  $R^7$  is linear or branched alkyl. Thus, claim 11 is broader than the claim on which it depends, namely claim 1, given that while claim 1 is limited to water-soluble hyperbranched polymeric dye with dye chromophore and hydrophilic group incorporated into the polymer base chain, claim 11 encompasses both hyperbranched polymeric dye that is water-soluble and contains hydrophilic group incorporated into the polymer base chain, i.e. when  $R^7$  is carbonyl or aromatic moiety containing a dye chromophore, and hyperbranched polymeric dye that is not water-soluble and does not contain hydrophilic group incorporated into the polymer base chain, i.e.  $R^7$  is linear or branched alkyl.

Similar objections arise with respect to present claims 12-13 which each also depends on claim 1 and which each encompass both water-soluble hyperbranched polymeric dye and hyperbranched polymeric dye that is not water-soluble. Thus, each of claim 12 and 13 fail to further limit the scope of the claim on which they depend given that each claim is broader than claim 1.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 10-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 1 recites that the water-soluble hyperbranched polymeric dye comprises hydrophilic group incorporated into the polymer base chain “wherein the hydrophilic group comprises an ether group, a substituted amine, a salt of a substituted amine, a quaternary amine, a carboxylic group, or a carbonyl group”. It is the examiner’s position that this phrase fails to satisfy the written description requirement under the cited statute since there does not appear to be a written description requirement of hydrophilic group that is ether group, a substituted amine, a salt of a substituted amine, or a quaternary amine in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163.

As support for the above phase, applicants point to pages 5-7 of the present specification. As set forth on page 3 of the response filed 2/22/05, the hyperbranched polymeric dye is produced by reacting various monomers which comprises substituents  $R^1$ - $R^9$ . Applicants note that the claimed hydrophilic groups, i.e. those incorporated into the polymer base chain, are obtained from these R groups or from the dye chromophore.

In light of the explanation as set forth in the response filed 2/22/05, it is the examiner’s position that there is support in the specification as originally filed to recite that the hydrophilic group is carbonyl group (see  $R^1$  and  $R^7$ ). Further, page 6 of the present specification discloses that the dye chromophore includes those as described in U.S. Patent Application 09/698,184 (now U.S. 6,468,338). Based on this disclosure and is seen in U.S. 6,468,338 (col. 2, line 57),

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there is support in the present specification for the recitation that the hydrophilic group is carboxylic group.

As support for the recitation of ether hydrophilic group, applicants point to substituent  $R^3$ . However, while  $R^3$  does include specific ether group, there is no support for the broad recitation of ether group in the present claims which clearly encompasses all types of ether groups for which there is no support in the specification as originally filed. That is, the disclosure of a few specific embodiments of ether groups in the present specification does not provide support in the present claims for the broad recitation of "ether".

Similarly, as support for the recitation of substituted amine hydrophilic group, applicants point to substituent  $R^3$ . However, while  $R^3$  does include specific substituted amine group, there is no support for the broad recitation of substituted amine in the present claims which clearly encompasses all types of substituted amines for which there is no support in the specification as originally filed. That is, the disclosure of a few specific embodiments of substituted amines in the present specification does not provide support for the broad recitation in the present claims of "substituted amine".

With respect to salt of a substituted amine or a quaternary amine hydrophilic groups, it is noted that applicant has not pointed to any portion of the specification, and examiner has not found any support for this phraseology in the specification as originally filed. However, applicants argue that  $R^7$ ,  $R^8$ , and  $R^9$  each can include dye chromophore and that the dye chromophore can include any hydrophilic group without limitation. However, this does not provide support for the recitation in the present claims of specific hydrophilic groups such as a salt of a substituted amine or a quaternary amine.

Applicants also note that on page 2 of response filed 2/22/05, that while not all the presently claimed hydrophilic group are specifically exemplified in a structure of the present specification incorporating such other hydrophilic groups into the polymeric backbone is within the knowledge and ability of one skilled in the polymeric arts based on the teaching of the specification.

However, while dye chromophores may contain several different types of hydrophilic groups, this broad disclosure does not provide support for the specific recitation of salt of a substituted amine or a quaternary amine. There appears to be no explicit disclosure in the specification as originally filed of salt of a substituted amine or a quaternary amine hydrophilic group.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CS  
4/7/05

  
Callie E. Shosho  
Primary Examiner  
Art Unit 1714